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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,712	09/30/2003	Ken Drottar	884.A81US1	2957
21186	7590	03/06/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH 1600 TCF TOWER 121 SOUTH EIGHT STREET MINNEAPOLIS, MN 55402			WHITE, DYLAN C	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/676,712	Applicant(s) DROTTAR ET AL.	
	Examiner Dylan White	Art Unit 2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/30/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because Figures 5 & 10 are hand drawn, compact, and cluttered. Use of a CAD program for Figures 5 & 10 is suggested. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 6, are rejected under 35 U.S.C. 102(b) as being anticipated by Voshell (US 6,285,215).

Voshell discloses an output driver having a programmable edge rate.

Regarding claim 1, Voshell discloses a first circuit (70 and transistors 74-98, 102-108) coupled to an input port of the transmitter (Pdn); and a second circuit (48, 50 and transistors 54, and 62-68) coupled to the first circuit and to an output port of the transmitter (DQ1), wherein the first circuit is sized with respect to the second circuit such that for a pulse signal applied to the input port, the transmitter generates an output signal having a rise-time and a fall-time that are substantially equal at the output port (col. 2, lines 10-13).

Regarding claim 2, Voshell discloses where the first circuit includes an inverter (70).

Regarding claim 3, Voshell discloses where the inverter includes an n-type MOSFET connected in series with a p-type MOSFET (col. 4, lines 15-18).

Regarding claim 6, Voshell discloses where the second circuit (48, 50 and transistors 54, and 62-68) includes a plurality of driver circuits (62 & 64)

Claims 12-19, are rejected under 35 U.S.C. 102(b) as being anticipated by Arcoleo et al. (US 5.864,506).

Arcoleo discloses a memory circuit having selectable output strength.

Regarding claim 12, Arcoleo discloses receiving a signal at a first circuit (603); in a second circuit (604 & 605) coupled to the first circuit, the second circuit including a plurality of p-type MOSFETS (604a & 605a), enabling the plurality of p-type MOSFETS to drive a transmission line (104); and enabling less than the plurality of p-type MOSFETS to drive the transmission line (col. 9, lines 28-47).

Regarding claim 13, Arcoleo discloses receiving a signal at a first circuit includes receiving a digital signal (col. 8, lines 66-67).

Regarding claim 14, Arcoleo discloses enabling the plurality of p-type MOSFETS (604a & 605a) to drive a transmission line (104) includes enabling the plurality of p-type MOSFETS substantially simultaneously (col. 9, lines 28-47).

Regarding claim 15, Arcoleo discloses enabling less than all of the p-type MOSFETS to drive the transmission line (104) comprises enabling less than all of the p-type MOSFETS substantially simultaneously (col. 9, lines 28-47).

Regarding claim 16, Arcoleo discloses a first circuit (603) coupled to an input port (601) of the transmitter (Fig. 6), the second circuit (604 & 605) to couple the first circuit to an output port (602) of the transmitter, the second circuit coupled to an equalization control circuit (611); a receiver (Fig. 1); and a transmission line (104) coupled to the output port of the transmitter to the receiver (col. 2, lines 17-18).

Regarding claim 17, Arcoleo discloses the first circuit including an inverter (603) having a p-type MOSFET (603a) and an n-type MOSFET (603b), the n-type MOSFET being between about two and about three times larger than the p-type MOSFET (col. 8 lines 20-26).

Regarding claim 18, Arcoleo discloses where the second circuit includes a voltage driver (col. 6, lines 15-23).

Regarding claim 19, Arcoleo discloses where the second circuit includes a controllable source impedance (col. 1, 52-60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, and 7-10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Voshell (6,285,215) in view of Arcoleo et al. (US 5,864,506).

Regarding claim 4, Voshell discloses the output driver of claim 3, but fails to teach the n-type MOSFET being larger than the p-type MOSFET.

Arcoleo discloses an output driver having selectable signal strength, where the first circuit is an inverter comprising a PMOS and an NMOS connected in series, where the n-type MOSFET is larger than the p-type MOSFET (col. 8, lines 20-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the driver/transmitter circuit of Voshell with the transistor sizing taught by Arcoleo for improving signal quality and impedance matching.

Regarding claim 5, Voshell fails to teach the n-type MOSFET is between about two and about three times larger than the p-type MOSFET (col. 8 lines 20-26).

Regarding claim 7, Voshell discloses that of claim 6, but fails to teach the plurality of driver circuits includes a p-type MOSFET connected in series with n-type MOSFET.

Arcoleo teaches a second circuit (604 & 605) including a plurality of driver circuits where each of the plurality includes a p-type MOSFET (604a, 605a) connected in series with an n-type MOSFET (604b, 605b, Fig. 6).

Regarding claim 8, Voshell fails to disclose the p-type MOSFET is sized to source a first current and the n-type MOSFET is sized to sink a second current substantially equal to the first current.

Arcoleo teaches the p-type MOSFET (604) is sized to source a first current and the n-type MOSFET (605) is sized to sink a second current substantially equal to the first current (col. 9, lines 16-19).

Regarding claim 9, Voshell fails to disclose an equalization control circuit.

Arcoleo teaches the second circuit (604 & 605) connected to an equalization control circuit (611).

Regarding claim 10, Voshell fails to disclose an equalization circuit.

Arcoleo teaches the equalization control circuit providing de-emphasis (col. 9, lines 28-47).

Claim 11, is rejected under 35 U.S.C. 103(a) as being unpatentable over Voshell (US 6,285,215) in view of Ang et al. (US 6,420,913).

Regarding claim 11, Voshell discloses that of claim 1, but fails to teach the transmitter transmitting a signal level and a first and second circuits coupled to a supply voltage potential having a value of about twice the signal level.

Ang discloses a driver with improved impedance control and teaches transmitting a signal level from a first and second circuits coupled to a supply potential having a value of about twice the signal level (claim 46).

Claims 20-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Voshell (US 6,285,215) in view of Martin et al. (US 6,894,536).

Regarding claim 20, Voshell discloses a first circuit (70 and transistors 74-98, 102-108) coupled to an input port (Pdn) of the transmitter; and a second circuit (48, 50 and transistors 54, and 62-68) coupled to the first circuit and to an output port (DQ1) of the transmitter, where the first circuit is sized with respect to the second circuit such that for a pulse signal applied to the input port, the transmitter generates an output signal having a rise-time and a fall-time that are substantially equal at the output port. Voshell fails to teach a first processor including the transmitter, and a second processor including a receiver coupled to the transmitter through a transmission line

Martin teaches a first processor including a transmitter and a second processor including a receiver coupled to the transmitter through the transmission line (Fig. 5), therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the driver/transmitter of Voshell in the processor communication line taught by Martin for better impedance matching between transmitter and receiver.

Regarding claim 21, Voshell teaches that of claim 20, but fails to teach a processor.

Martin teaches where the first processor includes a a very long instruction word processor (col. 5, lines 23-29).

Regarding claim 22, Voshell teaches that of claim 20, but fails to teach a second processor.

Martin teaches a second processor includes a complex instruction set processor (col. 5, lines 23-29).

Claim 23, is rejected under 35 U.S.C. 103(a) as being unpatentable over Voshell (US 6,285,215) in view of Martin et al. (US 6,894,536) and in further view of Arcoleo et al. (US 5,864,506).

Regarding claim 23, the combination of Voshell and Martin in claim 22, fails to teach the use of an equalization control circuit coupled to the second circuit to provide de-emphasis equalization.

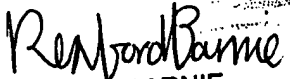
Arcoleo teaches an equalization control circuit (611) coupled to the second circuit (604 & 605) to provide de-emphasis equalization (col. 9, lines 28-47), therefor, it would have been obvious to one of ordinary skill in the art at the time on invention to use the driver/transmitter combination of Voshell and Martin with the drive/impedance control taught by Arcoleo for improving signal quality and impedance matching.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dylan White whose telephone number is (571) 272-1406. The examiner can normally be reached on m-f 7:30- 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on (571) 272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


REXFORD BARNIE
SUPERVISORY PATENT EXAMINER

dcw